Name: _____

Date: _____

Comparing samples to a population using Excel

How to Get a Random Sample from CensusAtSchool

Go to the CensusAtSchool Random Sampler to download a sample.X
Reference year: *(select year)* **Sample size:** *At least 200 students*
Select questions: *Environmental issues*
Location: *Select location* **Year level:** *(select a range of year levels)*

To protect privacy there is a rule built into the sampler that the requested sample size cannot exceed 10% entered.

Task:

A sample is often used to infer information about a population when it is impractical to collect data on the whole population. It is important that the sample does not exhibit bias. The usual way to overcome the possibility of bias is to select a simple random sample (SRS).

However, the size of the sample is also important. Imagine we wanted to find the mean height of all two hundred Year 10 students at a school. If we took a sample size of one this is too small as this person may be much shorter than most. On the other hand, a sample size of one hundred and ninety is too big – we may as well question all Year 10s.

In this investigation you are to collect data for different sample sizes and note any pattern.

From your random sample select the question related to Environmental Issues - reducing pollution, recycling rubbish, conserving water, forests and the marine environment.

Student responses on various environmental issues were recorded as numbers from
0 – 1000 where 0 represented minimal importance and 1000 represented maximum importance.

1. Select one of the environmental issues you want to investigate. Copy the data as a list in Excel.

2. Set up a table for y

sampl e size	mean student opinion
10	
20	

CensusAtSchool Random Sar
Access other similar lessons

3. Calculate the mean numerical value for your issue for all 200 students in your sample. Do this by selecting your data and in the cell in the table next to 200 enter =AVERAGE(a1:a200)

4. Next, follow the same steps to calculate and enter the mean for the other sample sizes shown in the table.

5. Select the data in your table and make a scatter plot.

6. If 200 is the full population, comment on how the mean of the different sample sizes compares with the mean of the

30	
40	
50	
60	
80	
100	
150	
200	